



International Journal of Economic Research

ISSN : 0972-9380

available at <http://www.serialsjournal.com>

© Serials Publications Pvt. Ltd.

Volume 14 • Number 10 • 2017

Factors Affecting Farmers' Benefits from Agricultural Cooperatives Services: The Case of Kafrelsheikh Governorate, Egypt

Tarek A. Abdelrahman

Associate Professor of Rural Sociology, Agricultural Economics Department, Fac. of Agriculture, Kafrelsheikh University, Egypt

Abstract: *Purpose:* This research identified at build a model for the determinants of farmers' benefits from agricultural cooperatives activities in rural Egypt, with Kafrelshiekh governorate as a case study.

Design/ methodology/ approach: The necessary data were collected from 221 respondents, were selected randomly using proportional stratified random sampling from three districts in Kafrelshiekh governorate. The questionnaire was used as a tool for data collection. Descriptive statistics, CFA and SEM were used to analyze the data using SPSS and AMOS programs.

Findings: The result showed that farmers' benefits from agricultural cooperatives in Kafrelshiekh governorate were low to medium level. Also, Research findings indicated that significant positive influence of farmers' toward agricultural cooperatives, farmers' innovativeness, and farming experience on farmers' benefits from it. Meanwhile, the results indicate a significant negative influence of farmers' age on farmers' benefits. Also Research findings indicates that farmers' innovativeness, farmers' attitude toward agricultural cooperatives, farmers' age and farming experience combined explained 44% of the variance in farmers' benefits from agricultural cooperatives.

Originality/ value: This paper discusses a model for the determinants of farmers' benefits from agricultural cooperatives activities in rural Egypt. This analysis can be useful in the development of the agricultural cooperatives to achieve a leading role in rural development, and maximizing farmers benefit from the activities of these cooperatives

Keywords: agricultural sector, agricultural Cooperatives, Farmers' Benefits, SEM, Egypt.

Paper type: Research paper

1. INTRODUCTION

Co-operatives are autonomous associations of persons who unite voluntarily to meet their common economic and social needs through a jointly owned and democratically controlled enterprise (ICA, 1995).

According to Ogunleye et al. (2015) a cooperative is gathered individuals with common goals, arranged to enhance the social welfare of its members through provide solutions to important rural economic, social, and cultural issues.

Egyptian agriculture is one of the most established agrarian generation frameworks on the planet. It is experiencing the hugest changes in decades. Customarily, government mediation has been a particular component of Egyptian farming and, for as far back as thirty years, an approach of tight brought together control over the entire rural creation and nourishment circulation forms has been set up. The agricultural production comprises three activities, crop production, animal production, and fish production. The agricultural sector are a fundamental pillar of the Egyptian national economy, where contribute about 25% of GDP, approximately 36% of the total exports and employs 34% percent of the total workforce, contributes to providing food security and the extension of the industrial sector, agricultural raw materials necessary for the continuity of this sector in its activity (Ministry of Agriculture, 2010). Accordingly, the agricultural development process is necessary because it is one of the important dimension of the components of sustainable development system.

In recent years, in light of the economic liberalization policy, the role of agricultural cooperatives in agricultural production diminished and it is unable development its mission and goals. After the January 25 revolution in Egypt, the agriculture cooperatives become inability to achieve their objectives of production, marketing and development in accordance with the rule of free farming pattern and decline of the state's role in the agricultural sector. Agricultural cooperatives have become unable to provide good production requirements necessary for their individuals as a result of feeble its money related position and constrained its movement in light of cancel supported farmers recourse to the private sector to get production inputs with prices outweigh the financial abilities.

Therefore, this study aimed at assessing farmers' benefit from agricultural cooperatives activities in the study area after the January 25 revolution and understand the determinants and the most important factors that affect it.

1.1. Problem statement and objectives

Agriculture is the most important sector for sustaining growth and reducing poverty in Egypt. In spite of the importance of the agricultural sector, its execution over a few decades has been somewhat disillusioning in perspective of its low efficiency. The most Egyptian farmers are Facing difficulties by numerous issues Including the difficulty of obtaining input, insufficient credit facilities, Lack of ability on the marketing of agricultural products, and Inadequate extension services. Most of these problems, in fact, the core of the work and functions of agricultural cooperatives, affecting farmers benefit from these cooperatives. Therefore, pushes to overcome some of these problems, government have re-emphasized cooperatives to be more effective and raise farmers benefit from it. Because agricultural cooperatives are development organizations established to solve agricultural, rural problems and to meet farmers' needs, the key indicator of this cooperatives success is the farmers take advantage of the services offered by them.

Consequently, the general goal of this research was to understand the determinants of farmers' benefits from agricultural cooperatives activities in rural Egypt, with Kafrelshiekh governorate as a case study. However, the specific objectives were: (i) to assess the level of farmers' attitudes toward agricultural

cooperatives. (ii) to assess the degree of farmers' benefits from agricultural cooperatives activities in the study area (iii) to build a model for the determinants of farmers' benefit from agricultural cooperatives activities in study area.

1.2. Overview of agricultural cooperatives in Egypt

According to the Egyptian cooperative's law number 122 / 1980, the agricultural cooperatives are considered to be economic and social units that aim at the agricultural development. They also contribute to elevate the economic and social level of their members in the framework of the national policy.

According to *El-Danasoury* al., (1992) Agricultural cooperatives are economic and a social unit aims to develop agriculture and rural development objectives in its areas in order to improve the level of their members economically and socially. As defined by the *Algzar and Mukhtar* (1985) it's a popular group joined by individuals of their own to achieve common goals. Meanwhile, *Younis* (2001) designated it as the appropriate institutional framework for the development of rural community as a productive unit and the Centre for Radiation civilizational and cultural.

The agricultural cooperatives have been established in Egypt as voluntary and independent organizations, composed of volunteer's members to meet their shared needs of economic, social and cultural through the facility they manage democratically in the first of November 1908. Agricultural Cooperatives are the most important components of the architecture of the Egyptian Cooperative, which includes agricultural cooperatives distributed on credit, reform and reclamation cooperatives (*Idris*, 1995). *Abdullah* (1995) indicated that the activities of agricultural cooperatives are focused on three main areas: (a) the service area: where the distribution of production, marketing, and some household goods. (b) Productive area: where the fattening of poultry and calves, the production of eggs and honey bee ... (c) extension area: where is providing counseling services and ongoing awareness of its members.

Agricultural cooperatives are divided in terms of the objective to: multi-purpose agricultural cooperatives which cover all areas of agricultural production and the successive stages of economic and social services required by its members. (B) Specialized agricultural cooperatives which operate on one limited area is just like livestock cooperatives, mechanization, and marketing cooperatives and with a membership of more than 4 million members (*Idris*, 1995).

According to the statistics of the Central Agricultural Cooperative Union of Egypt (2016) the number of agricultural cooperatives in the Arab Republic of Egypt (about 6682), include about 4 million members and an annual business volume of agricultural cooperatives (about 30) billion Egyptian pounds.

In spite of the fact that there are a few favorable circumstances of the agricultural cooperatives, their commitment to the farming advancement has gotten to be powerless. Also, the activities and tasks they execute, despite the fact that being different, do not adapt desires and needs of farmers.

Many previous studies have indicated that the Egyptian agricultural cooperatives facing a few challenges and issues that prevent them from playing their roles and achieve the expectations of their members. Many previous studies have indicated to some of these problems, for example, the results of the study conducted by *Mohamed* (2004: 121) have indicated that the most imperative issues are: the shortage of the agricultural production prerequisites (seeds, manures, pesticides), the unavailability of modern agricultural machines,

forced to import some crops , in particular, wheat and cotton in costs less than the market's costs, and lack of credit loans necessary for the establishment of farmers' small enterprises . Furthermore, the study found that low degree of benefit from agricultural cooperatives activities, low degree of satisfaction about agricultural cooperatives and negative farmers' attitudes toward the agricultural cooperative.

The study of Algzar *et al.* (2008) aimed to identify the quality of agricultural extension service given by the cooperatives in new communities at KafrelSheikh governorate. The results revealed to the low degree of quality extension service provided by the cooperatives. The results of the study conducted by Hassan (2011) Indicated to the most important problems that facing rural people through dealing with agricultural cooperatives were the high prices of agricultural requirements, the delay of their arrival , the absence of agricultural machines, the absence of extension fields, panels and meeting, and the absence of marketing of extension crops.

While the results of the study conducted by Abdel-Rahman (2012) indicated that the beneficiaries' assessment of the actual agricultural cooperatives service quality was negative. Results of the study also pointed that the level of beneficiaries' satisfaction with the service was low quality. According to study conducted by Hassan (2011) Results revealed that 20% of total respondents their benefits from agricultural cooperatives services was "high", 48% was moderate level, and 34% was low. The study of Abd- El-Fatah & Abdel-Wahab (2015) indicated that the performance of agricultural cooperatives activities and services was low, and that was (55%) of the farmers are dissatisfied with the agricultural cooperatives, and (60%) of the farmers fall into the category of low benefit.

1.3. Conceptual Framework of the Study

Many previews research have found that various variables have noteworthy Influencing farmers' benefits from agricultural cooperatives services. According to study conducted by Koksai *et al* (2016) Results revealed that a negative and significant relationship was found between the producers' belief that agricultural cooperatives protect their benefits and age. While a significant positive relationship was recorded between education level and the frequency of monthly visits to the cooperatives.

Zheng *et al.* (2012) found that the variables of age, education, household size, the size of land, the performance of cooperatives, and government support are the most influential variables on the farmers' participation in China's agricultural cooperatives.

The study conducted by Hassan (2011) found that there were positive correlation relationships between the benefit from the agricultural cooperative activities and educational level, innovativeness, farmers' membership in organizations; participate in development projects, and cultural openness. There was a negative correlation relationship with age, family size, and experience in agriculture. While there was no correlation relationship with the size of holdings farm.

According to Mohamed (2004) the factors that influence the farmers' attitudes towards agricultural cooperatives were the degree of advantage for farmers from cooperatives services, space between the place of residence and place of the cooperative, farmers' voluntary participation and membership in nongovernmental organizations.

Several factors influencing the farmers' innovativeness include education, size of household, amount of land available, age of household head and degree of contact with other areas (Nielsen, 2001). Bedasso

(2008) found that the factors affected significantly on farmers' innovativeness were time spent in the locality, farm experience, family size, number of livestock owned in TLU, participation in non-farm activities, mass media exposure (frequency of radio listening), extension contact.

In general, previous studies have revealed some of the variables that have significant impact on farmers' benefits from agricultural cooperatives services: educational level (Mojo *et al.*, 2015; Zheng *et al.*, 2012; Hassan, 2011), farm expansion (Zheng *et al.*, 2012; Hassan, 2011), age (Mojo *et al.*, 2015; Hassan, 2011), farmers' membership in organizations (Hassan, 2011), farmers' innovativeness (Hassan, 2011), participate in development projects (Hassan, 2011; Mohamed, 2004), cultural openness (Hassan, 2011), farmers' attitudes towards agricultural cooperative (Mohamed, 2004), membership in nongovernmental organizations (Mohamed, 2004).

Therefore, the conceptual framework for this study was produced in view of the theoretical perspectives and previous studies discussed above. In the conceptual framework the different factors supposed to influence talked about above. In the conceptual framework the distinctive variables expected to impact on farmers' benefits from agricultural cooperatives service, particularly, those related to demographic and personal (age, farmers' education, farming experience), social-cultural (social participation, mass-media exposure, attitude toward agricultural cooperative, innovativeness), and wealth-related (farm size) factors were considered (Figure 1).

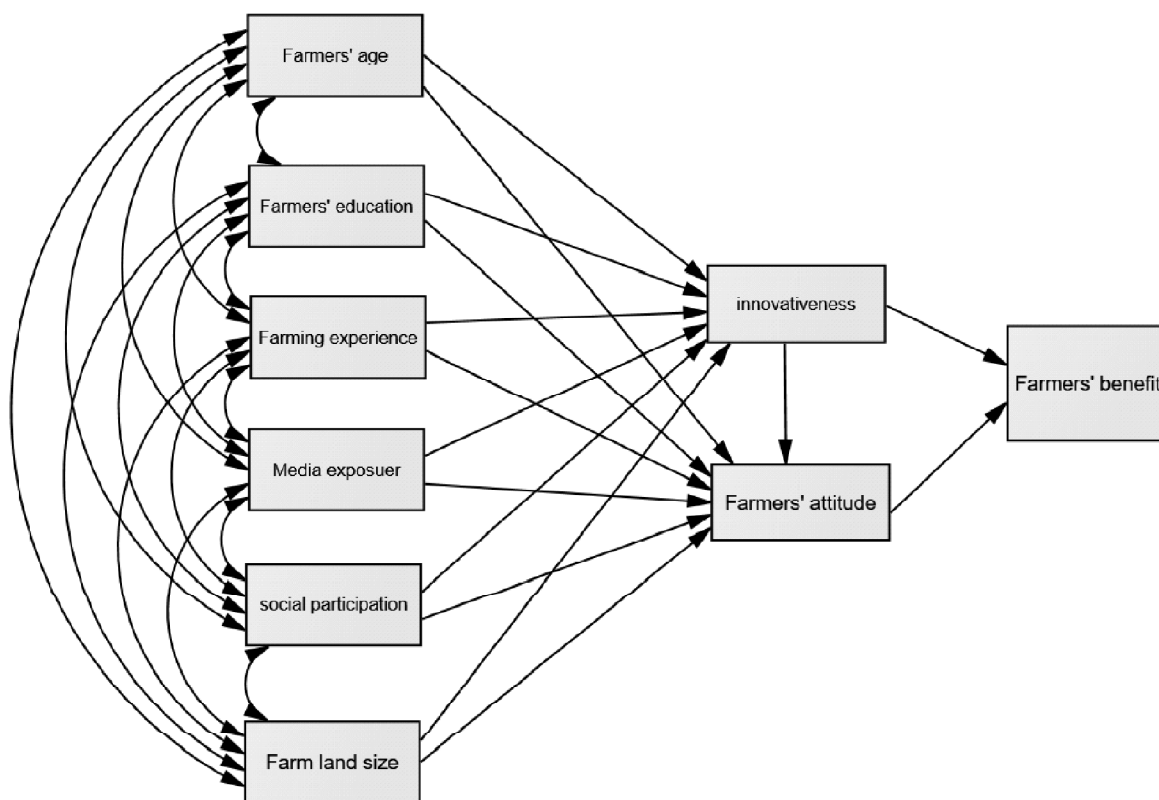


Figure 1: The conceptual model

1.4. Hypotheses

The study proposes the following main hypotheses:

- H1: exogenous variables (farmers’ age, farmers’ education, farming experience, mass-media exposure, social participation, farm size) have significant influence on farmers’ innovativeness.
- H2: exogenous variables (farmers’ age, farmers’ education, farming experience, mass-media exposure, social participation, farm size, farmers’ innovativeness) have significant influence on farmers’ attitudes toward agricultural cooperatives.
- H3: Farmers’ innovativeness and farmers’ attitudes toward agricultural cooperatives in addition to exogenous variables have significant impact on farmers’ benefits from agricultural cooperative activities.

2. RESEARCH METHODS

2.1. Research area and sampling technique

This study was conducted in Kafrelsheikh governorate. Kafrelsheikh is one of Delta Region’s governorates that lie in the far North of the Egypt. It is bordered in the North by the Mediterranean Sea. The governorate’s total area is nearly 3466.69 km² and is divided into 10 districts, 11 cities, and 69 rural local units which consist of 143 villages. Kafrelsheikh is an agricultural governorate, with total cultivated area of 550 thousand feddans and is famous for the production of rice, beets, wheat, and cotton. Kafrelsheikh governorate includes (248) an agricultural cooperative associations (IDCS, 2016).

A multi-stage stratified random sampling technique was used in choosing the study sample. In the first stage, 3 districts, Kafrelsheikh, Killen and Disouq, were randomly selected from the 10 districts in Kafrelsheikh governorate. Secondly, one village was chosen randomly from each district (Taifah, Tawelet Nashart and Kafr El-Arab, respectively). In the third stage, agricultural Cooperative Associations records were used to enumeration the number of holders of agricultural land in the three villages have been selected in the sample and who numbered 2311 farmers. In the fourth stage, a proportional stratified random sample has been selected a sample of 10% of the total farmers according to the number of holders in each village. The target study sample size was (231) farmers. Number of valid questionnaires for statistical analysis was 221. Prepared and pretested questionnaire was utilized to gather data for this study through personal interviews during the period from June to July, 2016. Table 1 show the study population and sample.

Table 1
Study population and sample

<i>districts</i>	<i>villages</i>	<i>agricultural land holders number</i>	<i>%</i>	<i>sample</i>	<i>respondents</i>
Kafrelsheikh	Taifah	867	37.5	87	81
Killen	Tawelet Nashart	670	28.9	67	65
Disouq	Kafr El-Arab	774	33.5	77	75
Total	-	2311	100.0	231	221

2.2. Measurement of the research variables

- **Farmers' age:** was measured by the farmer age in years right now of gathering information.
- **Educational level:** was measure by the quantity of years of the official instruction (number).
- **Farming experience:** was measured by the number of years that a farmer spent in the field of agriculture.
- **Mass-media exposure:** was measured by the quantity of times a farmer listens to radio, watches TV, and read printed materials. The response on every statement was ((never, rarely, once in a week and every day). These responses were given the values 1, 2, 3, 4 respectively. Marks accomplished by a farmer were added to express his Mass-media exposure.
- **Farm size:** was measured by total cultivated lands in Feddans by a farmer in Feddans, whether it owned, hired, or cultivated by farmers.
- **Farmers' social participation:** was measured by the quantity of governmental and nongovernmental associations in which the farmer takes part and has participation.
- **Innovativeness:** is a measure that capture the willingness of farmers to experiment with new farming practices. It was measured through five statements related to conducting new ideas. The response on each statement was (carried out immediately, wait another carried out and not carried out). These responses were given the values 3, 2, 1 respectively. Marks accomplished by a farmer were added to express his innovativeness.
- **Farmers' attitudes toward agricultural cooperative:** was measured through eight statements identified with the agricultural cooperative and its administrations. The response on every statement was (negative, neutral and positive). These responses were given the values 1, 2, 3 respectively. Marks accomplished by a farmer were added to express his attitudes toward agricultural cooperative. Theoretically, it wasranged from 8 to 24 marks.
- **Farmers' benefit from agricultural cooperative activities and services:**was measured by eleven statements identified with benefit from the agricultural cooperatives' services and activities, the response on every statement was (few, medium and high). These responses were given the values 1, 2, 3 respectively. Marks accomplished by a farmer were added to express his benefit from agricultural cooperative. Theoretically, it was ranged from 11 to 33 marks.

2.3. Data Analysis

The data was analyzed using SPSS 22.0. Confirmatory factor analysis and structural equation modeling (SEM) with AMOS 22 was employed in this study to test the hypothesized causal relationships.

3. RESULTS AND INTERPRETATION

3.1. Descriptive Data Analysis

Table 2 shows the distribution of respondents according to some socio-demographic attributes. The results provided in Table 2 show that more than half of the respondents (53.4%) were in the age group (30-49 years) with average 40.8 years, which indicate that half of the respondents are still more vibrancy in the agricultural activity. Results show that 25.3% of respondents are illiterate, and 33.5% of them have an

education covering a period of 3 – 9 years, while 41.1 % of them have an education of 12 – 16 years. About 43% of the respondents fall in the experience in agriculture group between 20-34 years with a mean of 25.28 years. In addition, findings revealed that the majority (62%) of the farmers had less than 2 feddans with a mean of 2.45 feddans and more than half (51.6%) of respondents were medium level of social participation, while 40.3% of them have a high level of social participation. Finally, 41.63% of the respondents were in medium level of mass-media exposure, while 18.55% of them have a high level of mass-media exposure.

Table 2
Descriptive statistics of respondents

<i>Variables</i>	<i>F (n=221)</i>	<i>%</i>	<i>M</i>	<i>Std.</i>
Farmers' age (years)			41.84	10.98
20- 29	35	15.84		
30- 39	61	27.60		
40- 49	57	25.79		
50- 60	68	30.77		
Educational level (years)			7.64	5.54
Illiterate (0 years)	56	25.3		
Read and write (3 years)	23	10.4		
Primary school (6 years)	9	4.1		
Secondary school (9 years)	42	19.0		
Intermediate degree (12 years)	61	27.6		
University degree (16 years)	30	13.5		
Farm land size (feddan*)			2.45	2.0
Less than 2 feddans	137	61.99		
2 - 4 feddans	50	22.62		
more than 4 feddans	34	15.38		
Farming experience (years)			25.28	11.44
5- 19 years	67	30.32		
20- 34 years	95	42.98		
35- 50 years	59	26.69		
Mass-media exposure				
Low (3-5)	88	39.82	8.12	2.6
Medium (6-9)	92	41.63		
High (10-12)	41	18.55		
Farmers' social participation			3.30	1.2
Low (1- 2 organization)	18	8.14		
Medium (3-4 organizations)	114	51.58		
High (5 organizations or more)	89	40.27		
Innovativeness			9.83	3.0
Low level (5- 8)	25	11.31		
Medium level (9-12)	78	35.29		
High level (13-15)	53	23.98		

* One Feddan = 4200.8335 m²; One Hectare = 10 000 m²– (One Feddan = 0.42 Hectare)

3.2. Farmers' attitudes towards agricultural cooperative and their benefits from it

Table 3 shows farmers' attitudes toward agricultural cooperative. 31.7% of respondents their attitudes toward the agricultural cooperatives are negative, 47% of respondents their attitudes are neutral, while 21.3% their attitudes are positive. In addition, Table 3 shows farmers' benefits from agricultural cooperative activities, 47.5 % of respondents, their benefits from agricultural cooperative activities are low, and 29% of respondents their benefits from agricultural cooperative activities are medium, while 23.5% their benefits are high. Therefore, the heads of agricultural cooperatives must be supporting strengths, and work to resolve other problems that may be the reason for the reluctance of some farmers to deal with agricultural cooperatives and benefit from its activities. Overall, the study findings indicated that the majority of the respondents' benefits from agricultural cooperatives in Kafrelshiekh governorate are low to medium level. In this manner, those rural cooperatives ought to be produced keeping in mind the end goal to give services that are adjusted to its members' needs. The findings conform to results of many studies such as (Abd El-Fatah & Abdel-Wahab, 2015; Hassan, 2011; Mohamed, 2004) that indicated that the level of farmers' benefits from agricultural cooperatives were low to medium level.

Table 3
Farmers' attitudes towards agricultural cooperative and their benefits from it

<i>Variables</i>	<i>F (n=221)</i>	<i>%</i>	<i>M</i>	<i>Std.</i>
Farmers' attitudes towards agricultural cooperative			22.80	8.2
Negative (8- 18)	70	31.67		
neutral (19- 29)	104	47.06		
Positive (30- 40)	47	21.27		
Farmers' benefits from agricultural cooperative activities			19.48	7.4
Low level (11- 18)	105	47.5		
Medium level (19-26)	64	29.0		
High level (27-33)	52	23.5		

4. MEASUREMENT MODEL

4.1. Reliability and Validity Analysis

The study was based on a confirmatory factor analysis (CFA) using (AMOS 22). CFA was applied on 24 items resulted into three factors which together explained 63.31% of the total variance. These factors are Factor I (farmers' attitude toward agricultural cooperatives) included eight explaining 40.59% of the total variance. Factor II (farmers' benefits from agricultural cooperatives services) explained 12.30% of the total variance. Factor III (farmers' innovativeness) explained 10.42% of the total variance (see table 4). As seen from results in table 4, values of Cronbach's alpha and composite reliability (CR) are greater than .70, .80 respectively, this indicate that all constructs are reliable.

Table 4
Validity and Reliability Tests

Variables	Items	Component			α	AVE	CR
		1	2	3			
Farmers' innovativeness	innov 1			0.750	0.839	0.603	0.98
	innov 2			0.820			
	innov 3			0.802			
	innov 4			0.767			
	innov 5			0.740			
Farmers' attitude	attitude 1	0.808			0.863	0.607	0.97
	attitude 2	0.809					
	attitude 3	0.829					
	attitude 4	0.743					
	attitude 5	0.787					
	attitude 6	0.769					
	attitude 7	0.735					
	attitude 8	0.749					
Farmers' benefit	benefit 1		0.770		0.935	0.63	0.99
	benefit 2		0.721				
	benefit 3		0.700				
	benefit 4		0.722				
	benefit 5		0.706				
	benefit 6		0.729				
	benefit 7		0.751				
	benefit 8		0.938				
	benefit 9		0.89				
	benefit 10		0.927				
	benefit 11		0.826				
Eigenvalues		9.74	2.950	2.5			
% of Variance		40.59	12.30	10.42			
Cumulative %		40.59	52.89	63.32			

In order to test the convergent validity, the researcher examined critical ratio (CR), the factor loading, and average variance extracted (AVE) (see table 4). The findings in table 4 indicated that all items had statistically significant and high loadings (see table 4), therefore all items related to their constructs. The AVE measures exceeded the cut-off point of 0.50 (Fornell and Larcker, 1981) in all constructs. Consequently, the convergent validity seems to be applicable.

To test the discriminant validity, the AVE values should be greater than the variance shared between that construct and the other constructs in the model (Fornell and Larcker: 1981). The results in table 5 indicated that the AVEs were greater than variance shared values; consequently, all constructs in this study met this condition.

Overall, the evaluation of model gave good evidence of reliability and validity for the operationalization of the research concepts.

Table 5
Discriminant validity

variables	Innovation proneness	Farmers' attitude	Farmers' benefit
Innovation proneness	.603		
Farmers' attitude	(.114)	.607	
Farmers' benefit	(.105)	(.403)	.630

Note. Values on the diagonal axis represent AVEs, and values in parenthesis represent variance shared between the constructs

4.2. Structural model and hypotheses testing

The study used structural equation modeling (SEM) analysis with AMOS 22 to test the research hypotheses. Kaplan (2000) noted that structural equation modeling is a multivariate technique that tries to clarify the relationship among different factors. Figure 2 demonstrates the proposed research model with the results and the covariance between the sex exogenous variables.

Table 6 exhibits several fit indices that utilized to evaluate the model (Hooper, Coughlan, & Mullen, 2008). Results in table 6 indicate a poor model fit, where that significant Chi-square, RMSEA of 0.085, AGFI and TLI less than 0.90; however all other fit indices show great model fit. These findings indicate needs for further modification based on the modification indices (M.I). Based on the M.I recommendation, the researcher is advised to add two relationships with each of farmers' age and farming experience to farmers' benefits, and then calculate estimates relating to the adjusted model.

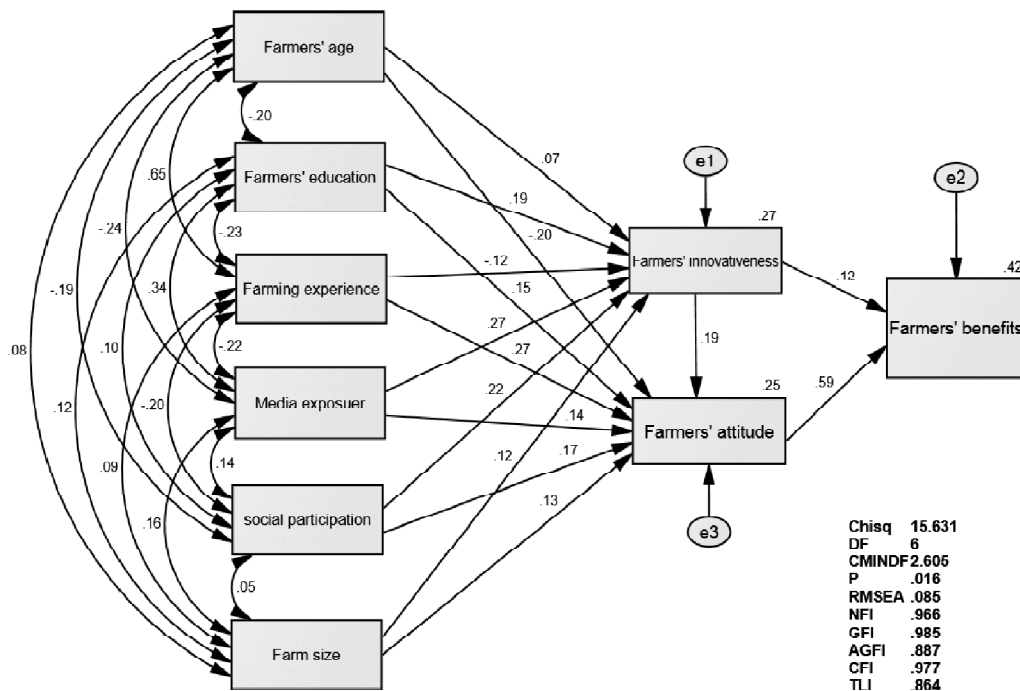


Figure 2: Proposed Research Model

Table 6
Goodness of Fit Indices for the Proposed and Adjusted Research Models

<i>Fit index</i>	<i>Recommended criteria</i>	<i>Proposed model</i>	<i>Adjusted model</i>
Chi-square significance	P> 0.05	P= 0.016	P= 0.156
Chi-square/Degrees of Freedom (CMIN/DF)	< 2 - 5	2.605	1.66
Root mean square error of approximation (RMSEA)	< 0.05- 0.08	0.085	0.055
Normed fit index (NFI)	≥ 0.90	0.966	0.986
Goodness of Fit (GFI)	≥ 0.90	0.985	0.993
Adjusted Goodness of Fit (AGFI)	≥ 0.90	0.887	0.926
Comparative Fit Index (CFI)	≥ 0.90	0.977	0.994
Tucker-Lewis coefficient (TLI)	≥ 0.90	0.864	0.944

As found in table 6, the Chi-square show insignificant difference between the model and the data, additionally the RMSEA is 0.055 which mirrors a decent model fit, likewise all other fit indices of the adjusted model are superior to the proposed model. Consequently, the structural model of this study demonstrated an acceptable model fitness level. The following step was to test the connections between constructs incorporated into the structural model.

Figure 3 demonstrates the adjusted research model with standardized path coefficients and the squared multiple correlation SMC values which similar to R². Table 7 summarizes the results of the path analysis.

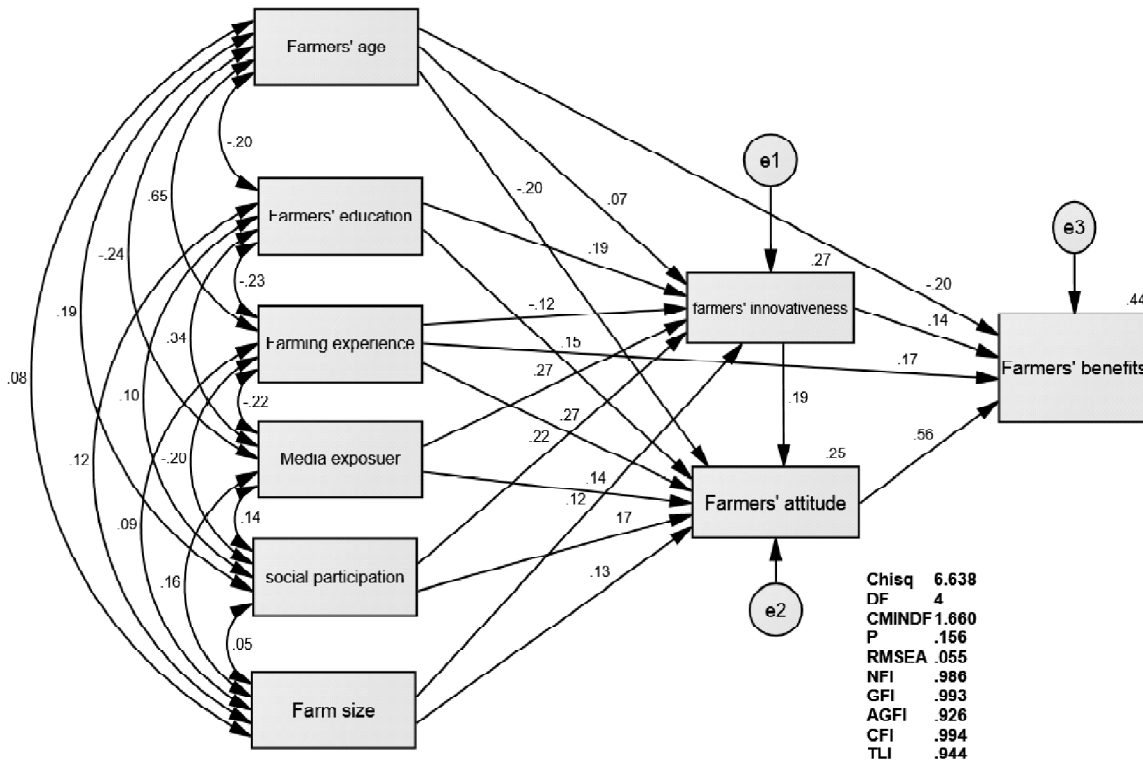


Figure 3: Adjusted Research Model

Table 7
Standardized Parameter Estimates of the Hypothesized Paths

<i>Hypothesis</i>				<i>Stand. Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Results</i>	<i>SMC (R²)</i>
H1	a	Farmers' Innovativeness	<— Farmers' age	0.067	.021	.865	.387	Not supported	0.27
	b	Farmers' Innovativeness	<— Farmers' education	0.191	.034	3.053	.002	Supported	
	c	Farmers' Innovativeness	<— Farming experience	-0.118	.021	-1.522	.128	Not supported	
	d	Farmers' Innovativeness	<— Mass-media exposure	0.267	.052	4.216	***	Supported	
	e	Farmers' Innovativeness	<— Social participation	0.218	.124	3.672	***	Supported	
	f	Farmers' Innovativeness	<— Farm size	0.117	.089	1.976	.048	Supported	
H2	a	Farmers' attitude	<— Farmers' age	-0.202	.059	-2.568	.010	Supported	0.25
	b	Farmers' attitude	<— Farmers' education	0.146	.096	2.257	.024	Supported	
	c	Farmers' attitude	<— Farming experience	0.272	.057	3.444	***	Supported	
	d	Farmers' attitude	<— Mass-media exposure	0.141	.150	2.110	.035	Supported	
	e	Farmers' attitude	<— Social participation	0.168	.352	2.704	.007	Supported	
	f	Farmers' attitude	<— Farm size	0.131	.247	2.156	.031	Supported	
	g	Farmers' attitude	<— Farmers' Innovativeness	0.189	.186	2.756	.006	Supported	
H3	A	Farmers' benefit	<— Farmers' Innovativeness	0.143	.134	2.585	.010	Supported	0.44
	B	Farmers' benefit	<— Farmers' attitude	0.557	.049	10.140	***	Supported	
	C	Farmers' benefit	<— Farmers' age	-0.199	.046	-2.926	.003	Supported	
	d	Farmers' benefit	<— Farming experience	0.174	.045	2.520	.012	Supported	

The first research hypotheses is concerned with the effect of exogenous variables (farmers' age, Farmers' education, Farming experience, mass-media exposure, social participation, farm size) on farmers' innovativeness. Results indicate that exogenous variables, namely farmers' education ($\beta = 0.191$; $P < 0.002$), mass-media exposure ($\beta = 0.267$; $P < 0.000$), social participation ($\beta = 0.218$; $P < 0.000$), and farm size ($\beta = 0.117$; $P < 0.048$) were positive and significant predictors of farmers' innovativeness, while Farmers' age ($\beta = 0.067$; $P < 0.387$) has a positive but not significant effect on farmers' innovativeness, and farming experience ($\beta = -0.118$; $P < 0.128$) has a negative but not significant effect on farmers' innovativeness. The path coefficients for the variables mentioned above could predict 27% of variability in farmers' innovativeness ($SMC = 0.27$). This finding supports H1 (b, d, e, and f) and not supported H1 (a, c). Whereas the paths coefficients are standardized, a comparison between of the coefficients pointed to the degree for which paths contribute to the endogenous variables. In addition, results reveal that mass-media exposure, social participation, and farmers' education were found to be most effective variable on farmers' innovativeness respectively.

Results indicated that the farmers' with high levels of mass-media exposure, social participation, and education have higher innovativeness than others do. Those findings were consistent with results the study of (Bedasso, 2008).

According to the results above, cooperatives should increase programs in the media to introduce the modern methods in agriculture, pest control and methods of modern marketing of agricultural crops. It

should also encourage farmers to participate in social organizations and development programs in the village and to involve them in the decision-making process.

The second research hypotheses was concerned with the effect of exogenous variables (farmers' age, farmers' education, farming experience, mass-media exposure, social participation, farm size, and farmers' innovativeness) on farmers' attitude toward agricultural cooperatives. Results indicated that the path coefficients for the effect of farmers' age ($\beta = -0.202$; $P < 0.010$), farmers' education ($\beta = 0.146$; $P < 0.024$), farming experience ($\beta = -0.272$; $P < 0.000$), mass-media exposure ($\beta = 0.141$; $P < 0.035$), social participation ($\beta = 0.168$; $P < 0.007$), total farm size ($\beta = 0.131$; $P < 0.031$) and farmers' innovativeness ($\beta = 0.189$; $P < 0.006$) to Farmers' attitude toward agricultural cooperatives were significant. The path coefficients for the variables mentioned above could predict 25% of variability in farmers' attitude toward agricultural cooperatives ($SMC = 0.25$). This finding supports H2 (a, b, c, d, e, f, and g). Results reveal in addition that Farming experience, farmers' age, farmers' innovativeness and social participation were found to be most effective variable on farmers' attitude toward agricultural cooperatives respectively.

The third research hypotheses is concerned with the effect of farmers' innovativeness and Farmers' attitude toward agricultural cooperatives on farmers' benefits from agricultural cooperatives. Results indicate that the path coefficients for the effect of farmers' innovativeness ($\beta = 0.143$; $P < 0.010$), farmers' attitude toward agricultural cooperatives ($\beta = 0.557$; $P < 0.000$) to farmers' benefits from agricultural cooperatives reveals positive, significance, and direction influence of each hypothesized relationship. In addition, the new paths which added based on the examination of modification indices from farmers' age ($\beta = -0.199$; $P < 0.003$) and farming experience ($\beta = 0.174$; $P < 0.012$) to farmers' benefits from agricultural cooperatives was found to be significant. These four variable together explain 0.44% of the variance in farmers' benefits from agricultural cooperatives ($SMC = 0.44$). These results tend to support hypotheses H3.

This findings conform to results of many studies such as (koksali; 2016, Mojo et. al, 2015; Hassan, 2011).

5. CONCLUSION AND RECOMMENDATIONS

This research examined the degree of farmers' benefits from agricultural cooperatives services and the determinants of farmers' benefits from it in rural Egypt, with Kafrelshiekh governorate as a case study. Results from this empirical study revealed that 31.7% of respondents their attitude towards the agricultural cooperatives "negative". Most of the farmers' benefits from agricultural cooperatives in Kafrelshiekh governorate are low to medium level. Therefore, these agricultural cooperatives should be developed in order to provide activities and services that are adapted to farmers' needs.

Research findings indicated that significant positive influence of farmers' toward agricultural cooperatives, farmers' innovativeness, and farming experience on farmers' benefits from it. Meanwhile, the results indicated a significant negative influence of farmers' age on farmers' benefits, that means that farmers with higher age have lower benefits from cooperatives services. Also Research findings indicated that farmers' innovativeness, farmers' attitude toward agricultural cooperatives, farmers' age and farming experience explain together 0.44% of the variance in farmers' benefits from agricultural cooperatives. In light of the findings the study recommends the following:

- Work should be done to change farmers' attitudes towards agricultural cooperatives by raising the level of education and intensify programs, which calls for the cooperative culture and encourage social participation among farmers.
- Work should be done toward raising farmers' innovativeness and their acceptance of new ideas and modern methods in the field of agriculture, which contributes to increased benefit from the services provided by agricultural cooperatives.
- improve the performance of agricultural cooperatives activities and the provision of services to their members at reasonable rates with high degree of quality at the right time with the expansion of its areas of activity; this requires the cooperatives to commit with scientific planning of their activities.
- Development of rural human resources by working on literacy and increasing awareness of the importance of cooperative work and the establishment of a national center for cooperative training.
- Review of agricultural cooperation Law No. 122 and the assurance of a new agricultural cooperative law to development of cooperatives and the agricultural sector through the payment and inducing of collaborative work.

REFERENCES

- Abd El-Fatah, Salwa M. E., and Abdel-Whab, M. E., (2015), Extension Role of Agricultural Cooperative in Behera and Kafr El-sheikh Governorates, *J. Agric. Econom. and Social Sci.*, Mansoura Univ., Vol. 6 (3): 365- 380.
- Abdel-Rahman, Tarek A. (2012), The Impact of Service Quality on Clients Satisfaction Under the Free Economic Policy: A Field Study on A Sample of Beneficiaries of the Egyptian Agricultural Cooperative Sector, King Saud Univ., Administrative Science Vol. 24 (2), pp. 215- 239.
- Abdullah, M., R., (1995), The role of cooperatives in agricultural extension under the economic reform, the Conference on the future of agricultural extension work under the free market system and the location of the agricultural cooperatives, Scientific Society of Agricultural Extension, 8 to 9 March.
- Algarzar, M., Abdalla M., and Al-Adly A., (1985), Factors associated with satisfaction with agricultural cooperatives work in Kafr El-Sheikh governorate, *Journal of Agricultural Research*, Tanta University, Vol. 11 (4).
- Algzar, Mohamed H., Nanseca, T. and Ali, Adel I. M. (2008), The quality of agricultural extension service provided by agricultural cooperatives in new communities at Kafr El-Sheikh governorate from the perspective of rural leaders. *Journal of Agricultural Research*, Kafrel Sheikh University, Volume 34, Number 2, pp. 22-42.
- Bedasso, Amsalu (2008), Determinants of Farmers' Innovativeness in Alba Special Woreda, Southern Nations, Nationalities and People Region, Ethiopia, Master thesis, Haramaya University.
- Central Agricultural Cooperative Union of Egypt (2016) (www.general.coop.org).
- El-Danasourye, F., Amin, S. and Al-Adly, A. (1992), Farmers' awareness of the developmental and extension contributions of agricultural cooperatives and how they benefit from it in some Beilla villages district, kafrelsheikh governorate, *Journal of Agricultural Research*, Tanta University, Vol. 18 (3).
- Fornell, C. and Larcker, D.F. (1981), Evaluating Structural Equation Models With Unobservable Variables and Measure, *Journal of Marketing Research*, Vol. 18, No. 1, pp. 39-50.
- Hassan, Nagwa A. (2011), Some Variables Affect Rural People Benefit from Some Rural Organizations. A Study in a Village of Menoufyia Governorate, *J. Agric. Economics and Social Sci.*, Mansoura Univ., Vol.2(2): 49 – 70.
- ICA (1995), International cooperative alliance (ICA). Review of international cooperatives. 4: 85-86.

- IDCS (2016), Egypt's Governments Description by Information - 8th Edition.
- Idris, M., (1995), The obstacles faced the agricultural cooperatives in the performance of its educational and extension under the free market system, the Conference on the future of agricultural extension work under the free market system and the location of the agricultural cooperatives, Scientific Society of Agricultural Extension, 8 to 9 March.
- Kaplan, D. (2000), Structural equation modeling: Foundations and extensions. Thousand Oaks, CA: Sage Publications.
- Koksal, Karadas, YakupErdalERTURK, and Okan Demir (2016), Farmers' Attitudes Towards Agricultural Cooperatives: The Case of IGDİR Province of Turkey, *Can J. App Sci.*, 6: 3. 1-7.
- Mohamed, Farahat Abdel-Seed (2004), Role of Agricultural Cooperatives in Agricultural Development – The Case of Menoufiya Governorate, Egypt, Ph.D thesis, Rheinischen Friedrich-Wilhelms-Universität.
- Mojo, D., Fischer, C., and Degefa, T. (2015), Who benefits from collective action? Determinants and economic impacts of coffee farmer cooperatives in Ethiopia, ICAE, 29th Milan, Italy, 8- 14 augst.
- Nielsen, F., (2001), Why do Farmers innovate and Why don't they Innovate More? Insights from a study in East Africa, pp. 92-103. In: Chris Reij& Ann Waters-Bayer (eds). Farmer Innovation in Africa: A source of inspiration for agricultural development. Earthscan Publication Ltd., London.
- Ogunleye, A. A., Oluwafemi, Z. O., Arowolo, K. O., and Odegbile, O. S. (2015), Analysis of Socio Economic Factors Affecting Farmers Participation in Cooperative Societies in Surulere Local Government Area of Oyo State, *IOSR Journal of Agriculture and Veterinary Science*, Volume 8, Issue 5, pp. 40-44.
- The Egyptian Law for the Agricultural Cooperation Number 122 /1980, Official Newspaper, Edition 27 (1), July 3, 1980, Egypt.
- Younis, K. A. (2001), The development of the system, management of agricultural cooperatives: methods of activity, field study, *AL-Azhar Journal of Agricultural Research*, No. 33.
- Zheng, S., Wang, Z., and Awokuse, T. (2012), Determinants of Producers' Participation in Agricultural Cooperatives: Evidence from Northern China, *Applied Economic Perspectives and Policy*, Volume 34, number 1, pp. 167–186.